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Docket 75063B/PRC
Customer No. 01333

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of

Alexander C. Loui, et al

A DIGITAL CAMERA FOR CAPTURING A SEQUENCE OF FULL AND REDUCED RESOLUTION DIGITAL IMAGES AND STORING MOTION AND STILL DIGITAL IMAGE DATA

Serial No. 09/685,998

Filed October 11, 2000

Group Art Unit: 2615

Examiner: Heather R. Long

I hereby certify that this correspondence is being deposited today with the United States Postal Service as first class mail in an envelope addressed to Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Carol J. Murphy

Carol J. Murphy

June 14, 2005

Date

Mail Stop APPEAL BRIEF-PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA. 22313-1450

Sir:

APPEAL BRIEF TRANSMITTAL

Enclosed herewith in triplicate is Appellants' Appeal Brief for the above-identified application.

The Commissioner is hereby authorized to charge the Appeal Brief filing fee to Eastman Kodak Company Deposit Account 05-0225. ***A duplicate copy of this letter is enclosed.***

Respectfully submitted,

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Enclosures

If the Examiner is unable to reach the Applicant(s) Attorney at the telephone number provided, the Examiner is requested to communicate with Eastman Kodak Company Patent Operations at (585) 477-4656

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Inventor(s):
Alexander C. Loui et al.

Title:
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Carol J. Murphy

Name: Carol J. Murphy

Date: June 14, 2005

June 13, 2005

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

REVISED APPEAL BRIEF

Applicants hereby appeal the final rejection of claims 1-8 of the above-identified application.

REAL PARTY IN INTEREST

The present application is assigned of record to Eastman Kodak Company. The assignee Eastman Kodak Company is the real party in interest.

RELATED APPEALS AND INTERFERENCES

There are no known related appeals and interferences.

STATUS OF CLAIMS

The present application was filed on October 11, 2000, with claims 1-8, as a continuation-in-part of prior U.S. Patent Application Serial No. 09/606,513, filed

June 29, 2000, and U.S. Patent Application 08/864,403, filed May 28, 1997. Claims 1-8 remain pending in the present application, and stand finally rejected under 35 U.S.C. §103(a). Claims 1-8 are appealed.

STATUS OF AMENDMENTS

No amendment has been filed subsequent to final rejection.

SUMMARY OF CLAIMED SUBJECT MATTER

Independent claim 1 is directed to a method for simultaneously recording motion and still images. The method includes steps (a) through (d). In step (a), a digital camera, such as digital motion/still camera 12 shown in FIG. 3 of the drawings, captures a motion image sequence and accompanying audio of a scene. Simultaneous with the motion image sequence capture, a still image sequence is captured in step (b). The still image sequence has full resolution images and a lower frame rate than the motion image sequence. Thus, the present invention as set forth in claim 1 requires not only capturing a motion image sequence, but also simultaneously capturing a still image sequence at a lower frame rate than the motion image sequence. The motion and still image sequences are compressed in respective compression steps (c) and (d).

FIG. 4 shows an example of the claimed simultaneous capture arrangement, with each pair of high resolution still image frames 102 being separated by four low resolution motion image frames 104. See the specification at, for example, page 5, lines 3-10, and page 10, line 27, to page 11, line 5. Advantageously, such an approach overcomes the significant problems associated with the conventional approach of requiring the user to "press a special button" in order to obtain each high resolution still image, as described at page 2, lines 6-13, of the specification.

Independent claim 2 is directed to a motion/still camera which comprises an image sensor, a means element, first and second image buffers for storing respective full resolution and reduced resolution frames, and a digital recorder coupled to the first and second image buffers for storing a repeating sequence of full and reduced resolution frames.

The means element, element (b), comprises means for automatically providing a repeating sequence of full resolution frames regularly interspersed between reduced resolution frames. Corresponding structure, material or acts in the specification comprise switch 64 and processors 66, 68 of digital motion/still camera 12 as shown in FIG. 3. See the specification at, for example, page 8, line 18, to page 9, line 14.

An example of the repeating sequence of full resolution frames regularly interspersed with reduced resolution frames can be seen in FIG. 4, where each pair of high resolution still image frames 102 is separated by four low resolution motion image frames 104.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Claim 1 is rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,038,257 (hereinafter "Brusewitz").

2. Claims 2-7 are rejected under §103(a) as being unpatentable over Brusewitz in view of U.S. Patent No. 6,104,752 (hereinafter "Yamagishi").

3. Claim 8 is rejected under §103(a) as being unpatentable over Brusewitz and Yamagishi in further view of U.S. Patent No. 6,208,691 (hereinafter "Balakrishnan").

ARGUMENT

1. Rejection of Claim 1 Under §103(a)

A proper *prima facie* case of obviousness requires that the cited reference, or combination of references, must teach or suggest all the claim limitations, and that there be some suggestion or motivation, either in the reference or references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify or combine the reference teachings. See Manual of Patent Examining Procedure (MPEP), Eighth Edition, August 2001, §706.02(j).

Applicants submit that the Examiner has failed to establish a proper *prima facie* case of obviousness in the §103(a) rejection of independent claim 1, in that the cited reference fails to teach or suggest all the claim limitations, and in that no

cogent motivation has been identified for modifying the reference teachings to reach the claimed invention.

Claim 1 is directed to a method for simultaneously recording motion and still images. The method includes the steps of:

a) capturing a motion image sequence and accompanying audio of a scene with a digital video camera adapted to record both low resolution motion image sequences and high resolution still images;

b) simultaneously capturing a still image sequence having full resolution images and lower frame rate than the motion image sequence, wherein the full resolution images represent images with more pixels than are represented by the low resolution motion image sequences;

c) compressing the motion image sequence using interframe compression and the accompanying audio and storing the compressed motion image sequences and audio data; and

d) compressing the still images using intraframe coding and storing the compressed still image data.

Thus, the present invention as set forth in claim 1 requires not only capturing a motion image sequence, but also simultaneously capturing a still image sequence at a lower frame rate than the motion image sequence. It is important to note that the claim calls for capturing a still image sequence simultaneous with the capture of the motion image sequence, rather than capture of a single still image. Such a still image sequence necessarily comprises multiple still images. Also, the still image sequence has a particular frame rate relative to the motion image sequence, namely, a lower frame rate than the motion image sequence.

As noted above, FIG. 4 shows an example of the claimed arrangement, with each pair of high resolution still image frames 102 being separated by four low resolution motion image frames 104. This regular sequence of high resolution still image frames 102 is created automatically, whenever the user presses the record button while the camera 12 is in the combination motion/still mode, as described in the specification at page 5, lines 3-10, and page 10, line 27, to page 11, line 5. It is

important to note that the user is not required to "press a special button" to capture each high resolution still image, as in the conventional practice noted previously herein. Instead, a sequence of such still images is captured simultaneously with the capture of the motion image sequence, at a lower frame rate than the motion image sequence.

The Examiner argues that all limitations of claim 1 are obvious in view of the Brusewitz reference. Applicants respectfully disagree. With regard to steps (a) and (b) of claim 1, the Examiner relies on FIG. 2 and column 5, lines 32-35, of Brusewitz. However, the relied-upon portions of Brusewitz fail to teach or suggest capturing a motion image sequence while also simultaneously capturing a still image sequence at a lower frame rate than the motion image sequence. As noted above, such a still image sequence necessarily comprises multiple still images. The relied-upon portions of Brusewitz, by way of contrast, appear to capture only a single still image responsive to a corresponding still image request command from a user. For example, with reference to the flow diagram of FIG. 2 in Brusewitz, step 54 captures only a single high resolution image, responsive to a corresponding still image request command from a user. See Brusewitz at column 5, lines 47-57. Thus, Brusewitz not only fails to teach or suggest the claimed invention, it actively teaches away from it, and suffers from precisely the same problems as the conventional "press a special button" approach described by Applicants at page 2, lines 6-13, of the specification.

This is made further apparent from other teachings in Brusewitz. For example, Brusewitz at column 5, lines 5-20, provides as follows, with emphasis supplied:

> By means of the video system configuration set forth in FIG. 1 and as set forth in the co-pending patent application of applicants, conventional video imaging capabilities may be combined with still image management. For example, the video imaging system 6 may operate in normal video mode, displaying a typical 30 frame per second sequence of images at a usual video resolution. However, when the user observes something of interest in the video, the user may request a higher resolution still image in order to study the view in more detail. For example, the viewer of the display 28 in FIG. 1 may want to

> get a more detailed image of the individual depicted. As discussed in more detail in said co-pending application, the viewer may access the human interface 30 of receiver 22, e.g., through button 36 on the display device 28 or button 40 on the remote device 42, via backchannel 34, to generate a still image.

It is therefore clear that Brusewitz teaches that a user enters a command in order to have camera 10 of system 6 in FIG. 1 capture a single high resolution still image. If a user subsequently wants the camera 10 to capture a second high resolution still image, another command must be entered. This fails to meet the limitations of claim 1 requiring capture of a still image sequence simultaneous with, but at a lower frame rate, than capture of a motion image sequence.

The Examiner in an Advisory Action dated February 8, 2005 further argues that the invention of claim 1 is obvious because a user can enter multiple commands in Brusewitz, each requesting capture of a single high resolution image. However, in such a scenario, there is no still image sequence captured simultaneously with a motion image sequence as recited in claim 1. This is apparent from, for example, the flow diagram in FIG. 2 of Brusewitz, which indicates that receipt of a command to capture a single high resolution image results in an alteration in the manner in which low resolution images are captured. For example, Brusewitz at column 5, lines 54-56, indicates that upon receipt of a command to capture a single high resolution image, "normal video image frame transmission (video mode) operations are suspended." These suspensions may be lengthy, possibly for a period of time encompassing steps 54-66 in the FIG. 2 flow diagram. Accordingly, it is believed that repeated entry of high resolution image capture commands in Brusewitz would not result in the claimed arrangement, in which a still image sequence is captured simultaneously with a motion image sequence. Brusewitz simply does not have a combination motion/still mode of the type described above in conjunction with an illustrative embodiment of the invention, which advantageously provides simultaneous capture of a motion image sequence and a still image sequence in the manner set forth in claim 1.

Inasmuch as claim 1 includes limitations not taught or suggested by the teachings of Brusewitz, the Examiner has failed to establish a *prima facie* case of obviousness for this claim.

Also, as indicated previously, the Examiner has failed to identify a cogent motivation for modifying the Brusewitz reference teachings to reach the claimed invention. The claimed arrangement advantageously overcomes problems associated with the conventional approach of requiring a user to enter a separate command each time a high resolution still image is desired. Brusewitz, by teaching such a one-command-per-image approach, directly teaches away from the claimed invention, and fails to provide its associated advantages. Accordingly, there is no objective evidence of record which would lead one skilled in the art to modify Brusewitz to reach the claimed invention.

The Federal Circuit has stated that when patentability turns on the question of obviousness, the obviousness determination "must be based on objective evidence of record" and that "this precedent has been reinforced in myriad decisions, and cannot be dispensed with." In re Sang-Su Lee, 277 F.3d 1338, 1343 (Fed. Cir. 2002). Moreover, the Federal Circuit has stated that "conclusory statements" by an examiner fail to adequately address the factual question of motivation, which is material to patentability and cannot be resolved "on subjective belief and unknown authority." Id. at 1343-1344. As noted above, there has been no showing in the present §103(a) rejection of claim 1 of objective evidence of record that would motivate one skilled in the art to modify the Brusewitz reference to produce the particular limitations in question.

It therefore appears that the Examiner in formulating the §103(a) rejection of claim 1 over Brusewitz has undertaken a piecemeal reconstruction of the claimed invention based upon impermissible hindsight, given the benefit of the disclosure provided by Applicants.

Thus, the §103(a) rejection of claim 1 over Brusewitz is believed to be improper, and should be withdrawn.

2. Rejection of Claims 2-7 Under §103(a)

Claim 2

Applicants submit that the Examiner has failed to establish a proper *prima facie* case of obviousness in the §103(a) rejection of independent claim 2, in that the proposed combination of references fails to teach or suggest all the claim limitations, and in that no cogent motivation has been identified for modifying or combining the reference teachings to reach the claimed invention.

Claim 2 recites, among other elements, an element (b) specifying means for automatically providing a repeating sequence of full resolution image frames regularly interspersed between reduced resolution image frames. The Examiner argues that this limitation is met by the flow diagram in FIG. 2 of Brusewitz. See the final Office Action at page 3, last paragraph. However, as Applicants described above, the Brusewitz system clearly requires that the user enter a separate command for each high resolution still image to be captured. This not only fails to meet the claimed means for automatically providing a repeating sequence of full resolution image frames regularly interspersed between reduced resolution image frames, it directly teaches away from such an arrangement. The Yamagishi reference is relied on for allegedly teaching the first and second image buffers, and not for the means element (b) of the claim. See the final Office Action at page 4, second paragraph. Applicants note that the Yamagishi reference fails to supplement the deficiencies of Brusewitz as applied to at least the means element (b). Accordingly, the collective teachings of Brusewitz and Yamagishi fail to teach or suggest each and every limitation of claim 2, and a proper *prima facie* case has not been established. Moreover, the statement of motivation for combining Brusewitz and Yamagishi, given at page 4, third paragraph, of the final Office Action, appears to be nothing more than a subjective, conclusory statement of the type insufficient to support an obviousness rejection.

In the February 8, 2005 Advisory Action, as noted above, the Examiner relies on the possibility of user entry of multiple commands in Brusewitz, each requesting capture of a single high resolution image. However, claim 2 calls for automatically providing a repeating sequence of full resolution image frames regularly interspersed between reduced resolution image frames. It is believed that entry of

multiple commands in Brusewitz will not produce such an arrangement, for at least the two reasons identified below.

First, if the user must manually enter one command for each high resolution image that is desired, there is no automatic provision of a sequence of full resolution image frames. In fact, such a manual arrangement suffers from precisely the same problems that Applicants identified and solved with the present invention. See the specification at, for example, page 2, lines 6-13, page 5, lines 3-10, and page 10, line 27, to page 11, line 5.

Second, there will be no repeating sequence of full resolution image frames regularly interspersed between reduced resolution image frames, such as that shown in FIG. 4 of the drawings. As noted above in the context of claim 1, the flow diagram of FIG. 2 of Brusewitz indicates that a normal video mode is suspended each time a high resolution capture command is received. The total length of this suspension includes a number of encoding operations, such as steps 58 and 62, which are likely to be variable in duration, presumably based on the complexity of the image to be encoded. See Brusewitz at, for example, column 3, lines 14-43. As a result, even if the user in Brusewitz were somehow able to precisely time his or her entry of the multiple high resolution capture commands, there would be no repeating sequence of full resolution image frames with regular interspersal as claimed. This is because there is no regularity in the duration of the processing operations associated with each high resolution capture command.

Thus, the §103(a) rejection of claim 2 over Brusewitz and Yamagishi is believed to be improper, and should be withdrawn.

Dependent claims 3-7 are believed allowable for at least the reasons identified above with regard to independent claim 2.

Claim 4

Dependent claim 4 specifies that a full resolution image is stored using a low resolution component stored as part of a motion sequence, and a full resolution component. The Examiner argues that the limitation is met by the teachings in steps 54-66 in FIG. 2 of Brusewitz. However, these steps relate to capture of a single high

resolution image, followed by encoding and transmission of low resolution and high resolution versions of that single high resolution image. There is no teaching or suggestion that the single high resolution image is stored using low and full resolution components, with the low resolution component being stored as part of a motion sequence.

Thus, it is believed that the combined teachings of Brusewitz and Yamagishi fail to meet the particular limitations of claim 4.

Claim 5

Dependent claim 5 calls for a processor coupled to a first image memory, that processes stored full resolution frames prior to recording, and produces from a full resolution image frame both a low resolution frame and a high resolution image frame. The Examiner in formulating the §103(a) rejection argues that these limitations are shown in column 3, lines 47-58, of Brusewitz. However, the relied-upon portion of Brusewitz refers generally to the operation of the FIG. 1 system, and fails to meet the particular limitations of the dependent claim. Accordingly, it is believed that the combined teachings of Brusewitz and Yamagishi fail to render claim 5 unpatentable.

3. Rejection of Claim 8 Under §103(a)

Dependent claim 8 calls for a camera further comprising a control for allowing the operator to set the number of full resolution frames to be captured per second.

The arguments provided above with regard to independent claim 2 are hereby realleged and incorporated herein by reference. Dependent claim 8, which depends from claim 2, is believed allowable for at least the reasons identified above with regard to claim 2.

The Balakrishnan reference cited by the Examiner fails to supplemental the fundamental deficiencies of the proposed combination of Brusewitz and Yamagishi as applied to independent claim 2. In the rejection of claim 8, the Examiner relies primarily on the teachings in column 11, lines 34-45, of Balakrishnan. It is believed

that these teachings fail to meet the particular limitations of claim 8. The relied-upon teachings relate not to image capture resolution, but to an image coding configuration, namely, the number and arrangement of I, P and B frames in an MPEG compressed video stream.

In addition, the Examiner provides only a conclusory statement of motivation for combining Brusewitz, Yamagishi and Balakrishnan, and thus fails to establish a proper *prima facie* case for this additional combination. See page 6, third paragraph of the final Office Action. The proffered statement appears to recite a feature of the claimed arrangement, namely, allowing "the user to select how many still frames they would like," as a motivation for the proposed combination.

In view of the foregoing, it is believed that the claims in the application are allowable over the prior art and such allowance is respectfully requested.

The Commissioner is hereby authorized to charge any fees in connection with this communication to Eastman Kodak Company Deposit Account No. 05-0225. ***A duplicate copy of this communication is enclosed.***

Respectfully submitted,

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CLAIMS APPENDIX

1. A method for simultaneously recording motion and still images, comprising the steps of:

a) capturing a motion image sequence and accompanying audio of a scene with a digital video camera adapted to record both low resolution motion image sequences and high resolution still images;

b) simultaneously capturing a still image sequence having full resolution images and lower frame rate than the motion image sequence, wherein the full resolution images represent images with more pixels than are represented by the low resolution motion image sequences;

c) compressing the motion image sequence using interframe compression and the accompanying audio and storing the compressed motion image sequences and audio data; and

d) compressing the still images using intraframe coding and storing the compressed still image data.

2. A digital motion/still camera comprising:

a) an image sensor for providing a sequence of image frames;

b) means for automatically providing a repeating sequence of full resolution image frames regularly interspersed between reduced resolution image frames, wherein the full resolution image frames represent images with more pixels than are represented by the reduced resolution image frames;

c) a first image buffer for storing at least one full resolution frame of pixel values;

d) a second image buffer for storing a plurality of reduced resolution frames of pixel values; and

e) a digital recorder coupled to the first and second image buffers for storing a repeating sequence of full and reduced resolution frames of pixel values.

3. The digital motion/still camera of claim 2, wherein the repeating sequence has a single full resolution frame followed by a plurality of low resolution frames.

4. The digital motion/still camera of claim 2, wherein the full resolution image is stored using a low resolution component stored as part of a motion sequence, and a full resolution component.

5. The digital motion/still camera of claim 2, wherein the apparatus further includes a processor coupled to the first image memory, that processes the stored full resolution frames prior to recording, and produces from a full resolution image frame both a low resolution frame and a high resolution image frame.

6. The digital motion/still camera of claim 5, wherein the processing period for the still image is longer than the capture frame period.

7. The digital motion/still camera of claim 6, wherein the processor also processes the reduced resolution frames in a processing period that is shorter than the capture frame period.

8. The digital motion/still camera of claim 2, further comprising a control for allowing the operator to set the number of full resolution frames to be captured per second.

EVIDENCE APPENDIX

None

RELATED PROCEEDINGS APPENDIX

None